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ZOOLOGY.

Wasps Social and Solitary.¹—Rarely has such a fascinating book as this on a given subject of natural history been presented to the lovers of nature studies. So clearly and charmingly written, it is a work from which all can derive pleasure and instruction. The amount of time and patience required to obtain a knowledge of the life habits of the various species can only be appreciated by one who has attempted to work out a few species bearing indirectly on another order of insects.

The varied habits of the wasps, from earth-diggers to wood-borers, and from masons to paper-makers, give one every opportunity of coming in contact with some of them during the many summer rambles, and often to observe them under the most favorable circumstances. Their methods of paralyzing other insects and spiders which they transport to their nests as food for their larvæ, suggests both surgical and engineering skill; equally interesting is the fact that each species selects certain kinds of food for its progeny; one captures spiders only, another the larvæ of Lepidoptera, a third flies, and others beetles or bugs. "So strong and deeply seated is the preference that no fly-robber ever takes spiders, nor will the ravisher of the spiders change to beetles or bugs."

The activities of the wasp are arranged under two groups:—"Instincts and Acts of Intelligence, it being understood that these classes pass by insensible stages into each other." Under the first are included stinging, the particular methods of attacking and paralyzing the prey, selecting the proper food, mode of carrying booty, the general style of nest, spinning of cocoons, etc. To distinguish acts of intelligence requires a familiarity with the normal conditions of the insect. Such modifications of instinct as the adaptation of the mud-daubers (*Pelopæus*) to the rafters and chimneys of buildings, the *Trypoxylon* taking advantage of the straws on the face of a stack that had been cut off smoothly, the hanging of spiders in a plant to avoid the attacks of ants while searching for a nesting-place, the occasional occupation by a queen *Polistes* of the previous year's comb instead of building a new one, the almost universal habit of *Bembex* of closing the openings to their burrows when leaving, and

¹ Peckham, George W., and Elizabeth G. *Wasps Social and Solitary*. With an introduction by John Burroughs. Boston and New York, Houghton, Mifflin & Co., 1905. 12mo, xv + 311 pp., illus.

of *Pompilus* of enlarging its nest to accommodate an unusually large spider, and of *Ammophiles* in seizing a small pebble in its mandible and pounding down the earth over the opening to its nest, would all come under the second group.

In summing up the chapter on the instinct and intelligence of wasps, the authors who have so entertainingly presented the facts, leave it largely to the reader "to determine whether the wasps are wiser than they seem or seem wiser than they are."

C. W. J.

Trouessarts' *Catalogus Mammalium, Supplement*.¹ — The great activity of the last few years in discovering and describing new species of mammals, living and fossil, has necessitated the preparation of a "quinquennial supplement" to include changes and additions made since the publication of the 1897 catalogue. The first three fascicles of this supplement list the known living and fossil Primates, Prosimiæ, Chiroptera, Insectivora, Carnivora (Fasc. 1); the Rodentia (Fasc. 2); the Tillodontia, Ungulata, and Sirenia (Fasc. 3). The fourth fascicle will conclude the work and will contain an index. In the preface the author states that the present supplement is intended to summarize the state of our knowledge on this subject to date of January 1, 1903, though in fascicle 3 certain new genera and species described in 1904, are included without explanation, *e. g.*, *Nesohippus* Amegh. (p. 635). In addition to listing the new forms, all the species noted in the edition of 1897-99 are given in their proper place, each with its serial number, but instead of the list of references following, there is added simply a number referring to the full quotations for the species given in the former list, in cases where no change has been made. A new feature introduced in the present supplement is the citation of the full reference in case of generic and subgeneric names. Footnotes and explanatory remarks are in French, not in Latin as in the previous edition.

In general the compiler has made no attempt at revisionary work so far as concerns specific determinations, but some care has been used in replacing unavailable generic and subgeneric names with new or later ones. Thus, in including Matschie's revision of the anthropoid apes, Trouessart does not repeat that author's error of

¹Trouessart, E. L. *Catalogus Mammalium tum Viventium quam Fossilium. Quinquennale Supplementum, Anno 1904*. Berlin, R. Friedländer & Sohn, 1904-1905. Fasc. 1-3, 8vo, iv + 752 pp. 12 Mk. per fasc.